

# Roles and Responsibilities



Wednesday, November 14<sup>th</sup> 2018

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Stormwater Coordinator

Berkeley County Stormwater Management Program

# Overview



- Regulatory Requirements
  - Permitting
  - Construction
  - Post-Construction
- Pond Owner's Responsibility
  - Inventory
  - Inspection
  - Improvements
  - Budgeting



**I can BEE  
RESPONSIBLE**

**by knowing and doing  
what is expected of me.**

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# Regulatory Requirements



- Permitting
  - Federal
    - Clean Water Act(CWA)/National Pollutant Discharge Elimination System (NPDES)
  - State
    - Stormwater Management and Sediment Reduction Act(SMSRA)
    - Stormwater Pollution Prevention Plans (SWPPPs)
    - Standards for Stormwater Management and Sediment Reduction
  - Local (MS4 Permitting)
    - Program Requirements
    - MCM #4 and MCM #5



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# Regulatory Requirements



- Plan Review/Permitting
  - Plan Review
  - Covenants
  - Maintenance Responsibility on Plans/Plat
- Construction
  - Pre Construction Meeting
  - Inspections (monthly)
  - As-built/Close Out





## 2.2.12 STORMWATER FACILITY OWNERSHIP AND MAINTENANCE

### 2.2.12.1 OWNERSHIP

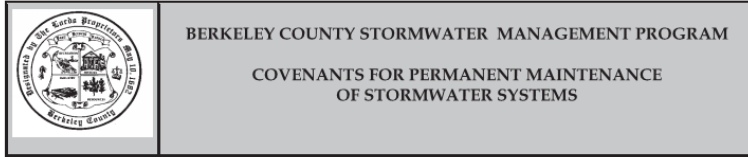
The owner of a portion or the entire stormwater system, as the case may be, shall be clearly designated before a stormwater approval will be issued. Ownership shall also be recorded on the final plat. Ownership shall imply responsibility for maintaining the stormwater system, including all ponds and other BMPs used for controlling runoff quantity and quality. **Ownership does not imply that the owner(s) may in any way alter the size, or function of any component of the stormwater system without consent from the County Engineer.** Owners found altering such components will be required to remove any alterations.

### 2.2.12.2 MAINTENANCE

Each component of the stormwater management system (pipes, inlets, BMPs) shall have a maintenance plan (activities and associated schedule) as part of stormwater management plan and CAA package. The plan shall also cover temporary measures used during construction in addition to the long term maintenance of the system. Suggested maintenance activities and recurrence intervals for water quality BMPs are discussed and referenced in Chapter 3.

In addition, **Covenants for Permanent Maintenance of Stormwater Systems must be recorded in the permanent land records with the Berkeley County Register of Deeds.** The Covenants is provided in Appendix B. The Covenants must be signed and executed prior to the issuance of a stormwater approval.

# Covenants



## BERKELEY COUNTY STORMWATER MANAGEMENT PROGRAM

### COVENANTS FOR PERMANENT MAINTENANCE OF STORMWATER SYSTEMS

THE TERM STORMWATER SYSTEMS MAY REFER TO WATER QUANTITY AND/OR WATER QUALITY FACILITIES, AND BEST MANAGEMENT PRACTICES, BMPS (i.e., detention basins, retention basins, stormwater ponds, stormwater wetlands, water quality buffers, swales, ditches, pipes, inlets, separators, filtering devices, water quality structures, etc.)

THIS Covenant made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by

and between (Insert Full Name of property owner) \_\_\_\_\_ hereinafter called the "Owner", and Berkeley County, South Carolina hereinafter called the "County".

WHEREAS, the Property Owner is the owner of certain real property described as Berkeley County Tax Map Number, (TMS#) \_\_\_\_\_ as recorded by deed in the Berkeley County Register of Deeds (ROD), Deed Book \_\_\_\_\_ Page \_\_\_\_\_, hereinafter called the "Property;" and

WHEREAS, the Owner is proceeding to, or has, made improvements on the Property; and

WHEREAS, the Site Plan/Subdivision Plan known as (Name of Plan/Development) \_\_\_\_\_

hereinafter called the "Plan," which is expressly incorporated herein by reference, as approved, or to be approved, by the County, provides for the construction and maintenance of stormwater facilities, BMPS, and improvements within the confines of the Property; and

WHEREAS, the County requires that on-site stormwater facilities, BMPS, and improvements as shown on the Plan be constructed and adequately maintained by the Owner, its successors and assigns, including any homeowners association;

WHEREAS, the Owner, its successors and assigns, understands that the execution and adherence to the provisions of this Covenant is a condition precedent to the County's permitting, and/or approving the Site Plan, Storm Water Management Plan, and/or Subdivision Plan for the Property and the development located thereon;

NOW, THEREFORE, in consideration of the foregoing premises and mutual covenants the parties hereby agree as follows:

1. The on-site stormwater facilities, BMPS, and, improvements shall be constructed, operated, and maintained by the Owner, its successors and assigns, in accordance with the approved Plan and specifications identified in the Plan, as well as in accordance with State and federal requirements, the Berkeley County Stormwater Management Ordinance and Stormwater Design Standards Manual, and any and all other applicable County ordinances.

2. The Owner, its successors and assigns, including any homeowners association, shall adequately maintain the stormwater facilities, BMPS, and improvements on the Property. Adequate maintenance required by this Covenant shall include, but is not limited to, scheduled and corrective maintenance as described on/in the approved Plan and/or as described in the Berkeley County Stormwater Design Standards Manual for all stormwater facilities, BMPS, and improvements intended to manage and/or control stormwater on the Property, with such facilities, BMPS, and improvements to expressly include, but not be limited to pipes, drainage structures, ditches, swales, vegetation, berms, pond areas, outlet structures, maintenance shelf(s) and access roads, or any other improvement associated with stormwater on the Property but excluding any such improvements located on, under, or within any publicly owned or dedicated rights-of-way in which State or County has accepted maintenance of the roadways and/or drainage facilities. Adequate maintenance is herein defined as keeping such stormwater facilities, BMPS, and improvements in good working condition such that they satisfactorily perform their intended design functions.

3. The Owner, its successors and assigns, shall inspect the stormwater facilities, BMPS, and improvements as described on/in the approved Plan and/or as described in the Berkeley County Stormwater Design Standards Manual to assure safe and proper functioning of the stormwater facilities, BMPS, and improvements located on the Property. Any and all deficiencies identified during such inspections shall be repaired as necessary at the Owner's expense. A detailed repair plan may be required to be prepared by a professional engineer, licensed in the State of South Carolina.

4. The Owner, its successors and assigns, hereby grants permission to the County, its authorized agents and employees, to enter upon the Property and to inspect the stormwater facilities, BMPS, and improvements as deemed necessary by the County for purposes of protecting the public health, safety or welfare, for purposes of investigating or inspecting any reported or suspected deficiencies in the stormwater facilities, BMPS, and improvements on the Property, for purposes of responding to or investigating citizens' complaints relating to the management or control of stormwater on the Property, or for any other purpose deemed necessary by the County. The County shall provide the Owner, its successors and assigns, with a copy of any inspection findings, as well as a directive to commence with any required repairs. To the extent that the County does not agree with or to the contemplated repairs proposed by the Owner, the County may submit an alternate repair plan to the Owner or require the Owner to submit a detailed repair plan prepared by a professional engineer, licensed in the State of South Carolina.

5. In the event the Owner, its successors and assigns, fails to maintain the stormwater facilities, BMPS, and improvements on the Property in good working condition acceptable to the County, or fails to make repairs as specified in the inspection report within a reasonable time frame as established by the County, with such time frame not to be shorter than thirty (30) days, the County may enter upon the Property and take any and all action necessary to correct deficiencies identified in the inspection report. The Owner, its successors and assigns, shall be responsible for any and all expenses incurred by the County in taking such corrective action. This provision shall not be construed to allow the County to erect any structure of a permanent nature on the land of the Owner outside the easement for the stormwater management/BMP facilities. It is expressly understood and agreed that this Covenant imposes no obligation or responsibility on the County to routinely maintain or repair any stormwater facilities, BMPS, and improvements located on the property.

6. In the event that the County performs or undertakes work of any kind pursuant to this Covenant or expends any funds or resources in performance of said work for labor, use of equipment, supplies, material, and the like, the Owner, its successors and assigns, shall reimburse the County upon demand, within thirty (30) days of receipt of same.

7. This Covenant shall impose no liability on the County with respect to the maintenance or repair of any stormwater facilities, BMPS, and improvements on the Property, nor does the County assume any obligation

or duty to undertake or perform any action allowed for, or permitted by, this Covenant. The Owner, its successors and assigns, further agrees to indemnify and hold the County harmless from any liability arising out of the management, operation, maintenance, or failure of any stormwater facilities, BMPS, and improvement subject to this Covenant.

8. Notwithstanding any right extended to the County pursuant to this Covenant, it is expressly recognized and acknowledged that the County retains all prosecutorial rights and remedies available to it, including the enforcement of any and all applicable County ordinances, against the Owner, its successors and assigns, relating to the operation, maintenance, and/or repair of stormwater facilities, BMPS, and improvements located on the Property.

9. This Covenant shall be recorded among the land records of Berkeley County, South Carolina, and shall constitute running with the land, and shall be binding on the Owner, its administrators, executors, assigns, heirs and any other successors in interests, including homeowners association.

IN WITNESS WHEREOF the undersigned have caused this Covenant to be executed on the date first written above.

WITNESSES:

OWNER:

Witness:

Individual/Company/Corporation/Partnership Name

Witness

By:  
Title:

STATE OF SOUTH CAROLINA )

COUNTY OF BERKELEY )

ACKNOWLEDGEMENT

I, the undersigned Notary Public, do hereby certify that \_\_\_\_\_

\_\_\_\_\_ personally appeared before me this day and acknowledged the due execution of the foregoing instrument

WITNESS my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_(SEAL)

Notary Public for South Carolina


My Commission Expires: \_\_\_\_\_

# Regulatory Requirements



- **Post-Construction**

The Post-Construction Stormwater Management component is designed to provide Berkeley County the authority to require structural and non-structural stormwater quality best management practices (BMPs) on construction sites. The program holds owners responsible for the operation and maintenance of permanent BMPs through a legal document described as Covenants for Permanent Maintenance of Stormwater Systems. It also provides Berkeley County the authority to conduct post-construction site inspections and the ability to punish violators. The post-construction BMPs along with inspection and enforcement are expected to reduce siltation, turbidity, and other pollutants associated with developments.

	<b>BERKELEY COUNTY STORMWATER MANAGEMENT PROGRAM</b> 1003 Highway 52 Post Office Box 6122 Moncks Corner, SC 29461-6120 843.719.4127 843.723.3800 843.567.3136 843.719.4695 fax
	<b>INSPECTION REPORT</b>

<b>Inspection Date:</b>	10/22/2015
<b>Project Name and Location:</b>	Berkeley Commons TMS 222-11-00-074
<b>BP/CAA#:</b>	
<b>Person(s) Present at Site:</b>	Thomas Brant (Lyn)

☐ Stormwater Inspection  
☒ Post-Construction Stormwater Inspection

**General Comment(s):**  
The purpose of this inspection was to ensure that the associated pond, outfall structures and stormwater features for the previously constructed project are being properly maintained per Berkeley County standards. On the day of this inspection, it was noted that all structures appear to be clean and clear and functioning. However, All of the inflow pipes appear to be experiencing some degree of bank erosion due to insufficient stabilization. There are multiple embankment stabilization issues.

**List deficiencies and describe corrective actions needed:**

☐ Additional Comment(s) Attached

**Prepared by:** Thomas Brant (Lyn) BCE

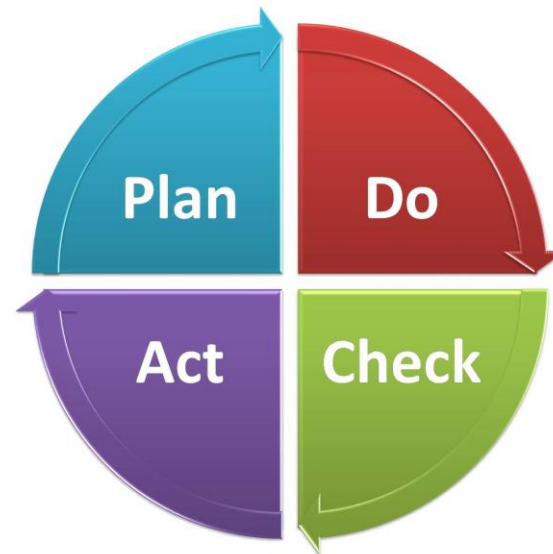
**Signature:** \_\_\_\_\_







# IF YOU FAIL TO PLAN, YOU PLAN TO FAIL



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# Pond Owner's Responsibility



- Inventory
  - Maintenance Agreement
  - Pond As-built
  - Notes from Design Plans



# Neighborhood Stormwater Pond Maintenance Log and Resources



Agency/Organization Contact List

Agency/Organization	Phone Number	Website(s)
SC Department of Health and Environmental Control (SCDHEC) -plans, stormwater regulations/permits,	(803) 898-3432	<a href="http://www.scdhec.gov/">http://www.scdhec.gov/</a>
SCDHEC Office of Ocean and Coastal Resource Management -buffers, stormwater pond maintenance, best management practices, water quality	(843) 953-0200	<a href="http://www.scdhec.gov/environment/ocrm/">http://www.scdhec.gov/environment/ocrm/</a>
South Carolina Department of Natural Resources (SCDNR) -nuisance wildlife, fish stocking	(843) 953-5291	<a href="http://www.dnr.sc.gov/">http://www.dnr.sc.gov/</a> <a href="http://www.dnr.sc.gov/wildlife/control.html">http://www.dnr.sc.gov/wildlife/control.html</a>
Carolina Clear -stormwater pond general information, workshops	(864) 656-3311	<a href="http://www.clemson.edu/public/carolinaclear/">http://www.clemson.edu/public/carolinaclear/</a>
Clemson University Cooperative Extension Services -stormwater ponds, vegetation, soil testing, buffers	(843) 722-5940	Plant Problem Clinic <a href="http://www.clemson.edu/public/regulatory/plant_industry/plant_prob_clinic/">http://www.clemson.edu/public/regulatory/plant_industry/plant_prob_clinic/</a> Pesticide Applicator Training <a href="http://www.clemson.edu/extension/pest_ed/app_training/index.html">http://www.clemson.edu/extension/pest_ed/app_training/index.html</a>
South Carolina Native Plants Society -vegetation, buffers		<a href="http://scnps.org/">http://scnps.org/</a> <a href="http://scnps.org/education/homeowners/">http://scnps.org/education/homeowners/</a>
U.S. Army Corps of Engineers -wetlands	(843) 329-8044	<a href="http://www.sac.usace.army.mil/Missions/Regulatory.aspx">http://www.sac.usace.army.mil/Missions/Regulatory.aspx</a>
South Carolina Sea Grant Consortium -aquatic weed control	(843) 953-2078	<a href="http://www.scseagrant.org/">http://www.scseagrant.org/</a>
NRCS Soil and Water Conservation District- Berkeley -invasive species, soil quality/health, water quality, wildlife habitat	(843) 719-4146	<a href="http://www.nrcs.usda.gov/wps/portal/nrcs/site/sc/home/">http://www.nrcs.usda.gov/wps/portal/nrcs/site/sc/home/</a>
NRCS Soil and Water Conservation District- Charleston -invasive species, soil quality/health, water quality, wildlife habitat	(843) 727-4160	<a href="http://www.nrcs.usda.gov/wps/portal/nrcs/site/sc/home/">http://www.nrcs.usda.gov/wps/portal/nrcs/site/sc/home/</a>
NRCS Soil and Water Conservation District- Dorchester -invasive species, soil quality/health, water quality, wildlife habitat	(843) 563-3218	<a href="http://www.nrcs.usda.gov/wps/portal/nrcs/site/sc/home/">http://www.nrcs.usda.gov/wps/portal/nrcs/site/sc/home/</a>
NRCS Soil and Water Conservation District- Beaufort -invasive species, soil quality/health, water quality, wildlife habitat, dugout ponds	(843) 522-8100	<a href="http://www.nrcs.usda.gov/wps/portal/nrcs/site/sc/home/">http://www.nrcs.usda.gov/wps/portal/nrcs/site/sc/home/</a>

[www.ashleycooper.org](http://www.ashleycooper.org)



[www.clemson.edu/extension/stormwaterponds](http://www.clemson.edu/extension/stormwaterponds)





# Pond Owner's Responsibility

- Inspection
  - Trash
  - Inlet/outlet Structure
  - Bank Erosion
  - Excessive Weed/Algae Growth
  - Debris/Over Growth
  - Storage







# Pond Owner's Responsibility

- Annual O&M Cost for pond maintenance is 2-10% of initial pond construction cost
- BUDGET, BUDGET, BUDGET!!



## Conclusion

1. Proper stormwater pond maintenance is important to a pond's functionality.
  1. Municipal ordinances are targeted to ensure that maintenance is carried out
2. Maintenance activities
  1. Annual – Water management, mosquito, debris removal
  2. Infrequent – Dredging, shoreline restoration
3. Costs
  1. Annual: \$10K - \$25K
  2. 5 Year: \$12K - \$29K
  3. 30 Year: \$158K - \$485K
  4. Lifetime: \$530K - \$1400K



# Pond Owner's Responsibility

- Check your maintenance agreement or details on the original plan design for maintenance schedule.

Stormwater Pond Maintenance Log	
<i>Use this sheet to track maintenance concerns and any corrective actions taken.</i>	
<b>Pond ID:</b> _____ <i>(Refer to Pond Identification Sheet)</i>	<b>Date:</b> _____
<b>Maintenance Concern:</b>	
<input type="checkbox"/> Algae	<input type="checkbox"/> Low or High Water Levels
<input type="checkbox"/> Shoreline Erosion	<input type="checkbox"/> Muddy Water
<input type="checkbox"/> Water Quality	<input type="checkbox"/> Surface Films and Slimes
<input type="checkbox"/> Sedimentation	<input type="checkbox"/> Fish Kills
<input type="checkbox"/> Nuisance Wildlife (specify): _____	<input type="checkbox"/> Other (specify): _____
<b>Event Description:</b> <i>(What caused you to call for service? Include season, temperature, and other details of when problem originated.)</i>	
<b>Remediation/Maintenance Activity Performed and by Whom:</b>	
<b>Cost of Remediation/Maintenance:</b>	
<b>Follow Up Services or Recommendations:</b> <i>(Include name of board member/resident responsible for follow-up)</i>	

# Pond Owner's Responsibility



**US Army Corps  
Of Engineers®**  
Charleston District

<https://www.sac.usace.army.mil/>

- Who should I contact for questions about planning and completing maintenance?!
  - **US Army Corps of Engineers (USACE)**
  - SC Department of Health and Environmental Control (SCHEC)
    - Bureau of Water
    - Ocean and Coastal Resource Management
  - Municipal and County Governments (referred to as MS4s)

# Pond Owner's Responsibility



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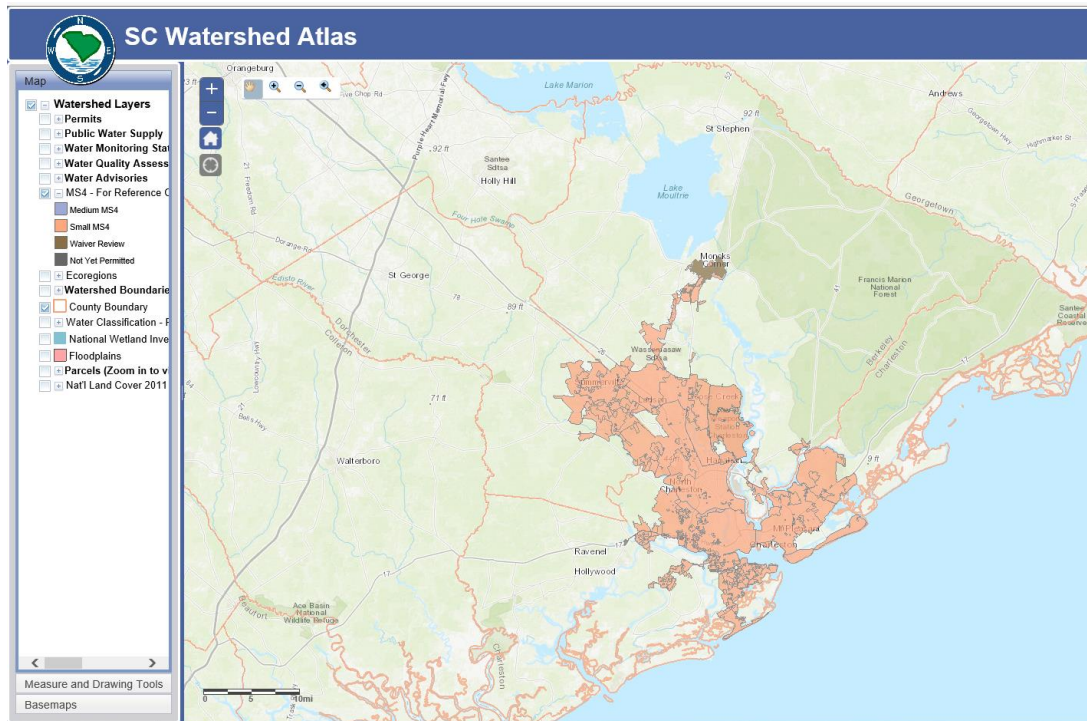


<https://live-sc-dhec.pantheonsite.io/>



<https://live-sc-dhec.pantheonsite.io/>

# Pond Owner's Responsibility



<https://gis.dhec.sc.gov/watersheds/>

- Who should I contact for questions about planning and completing maintenance?!
  - US Army Corps of Engineers (USACE)
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    - Bureau of Water
    - Ocean and Coastal Resource Management
  - **Municipal and County Governments (referred to as MS4s)**





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# THANK YOU



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**Moncks Corner, SC 29461**  
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**[kelsey.gagnon@berkeleycountysc.gov](mailto:kelsey.gagnon@berkeleycountysc.gov)**



**<https://www.berkeleycountysc.gov/drupal/engineering/storm>**